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quotes a Mr. Sullivan, from our country apparently, who describes a tribe in Venezuela, on the Brazilian frontier, the males of which average four feet eight inches. The reference is too vague to admit of verification, and if some reader of SCIENCE can give further information about the statement it will be welcome to anthropologists.

THE TURANIANS AGAIN.

A FEW years ago, in European ethnography, the Mongolians reigned paramount. As Friedrich Müller said, 'Mongolian' or 'Turanian' was a sack into which all nations were thrust who could not be assigned elsewhere. Basques, Etruscans, Pelasgians, Ligurians, all were Mongolian.

For some time past there has been a lull in this mania; but in the July number of the *Revue de l'École d'Anthropologie*, Professor Herné brings forward a hypothesis surpassing in eccentricity even those previously advanced in this direction. He makes all the Celts, 'no matter in what region they may be studied,' of direct Mongolian descent. They entered Europe in the neolithic period, and brought with them a culture and a type of their own, their affinities being to-day markedly Turanian or Ural-Altaic. Surely this theory is a few years late.

THE INFLUENCE OF CITIES IN MODERN LIFE.

In one of his thoughtful studies published in the *Correspondant* (May, 1898) the Marquis de Nadaillac discusses the concentration of the population into cities, so marked in our day. Its chief cause is undoubtedly that more money can be made and more amusement obtained in cities than in the country.

In cities the mortality is greater, the natality less, than in the country. Marriage is not so common, illegitimate unions more frequent. Mental alienation increases; suicides are more numerous. Criminality as a whole is decidedly higher.

What is the remedy? asks the collector of the ominous facts. His reply is, unceasing effort to teach men that 'life has an aim nobler than gain, higher than material enjoyment.' All will agree with the conclusion.

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SCIENTIFIC NOTES AND NEWS.

HONORARY DEGREES CONFERRED BY THE UNIVERSITY OF EDINBURGH.

WE recorded the telegraphic despatch stating that the University of Edinburgh had conferred the honorary degree of LL.D. on Professor H. P. Bowditch and Professor William Osler. The University at its medical graduation ceremony conferred the degree on nineteen persons, all of whom but two were in attendance on the meeting of the Medical Association. The complete list is as follows: Henry Pickering Bowditch, M.D., member of the National Academy of Sciences, United States of America, Professor of Physiology, Harvard University; Sir William Broadbent, M.D., F.R.S.; Thomas Lauder Brunton, M.D., D.Sc., F.R.S., Lecturer on Materia Medica, St. Bartholomew's Hospital School, London; Eugene Louis Doyen, M.D., Paris; David Ferrier, M.D., LL.D., F.R.S., Professor of Neuropathology, King's College, London; Joseph Forster, M.D., Professor of Hygiene and Bacteriology, University of Strassburg; M. le Comte de Franqueville, Officer of the Legion of Honor, member of the Institute of France; Carl Gerhardt, M.D., Professor of Medicine, University of Berlin; Richard Burdon Haldane, Q.C., M.P., Jonathan Hutchinson, M.D., LL.D., F.R.S., Emeritus-Professor of Surgery, London Hospital College; Theodor Kocher, M.D., Professor of Surgery, University of Berne; August Martin, M.D., Professor of Gynecology, University of Berlin; Johann Miculicz, M.D., Professor of Surgery, University of Breslau; Ottavio Morisani, M.D., Professor of Midwifery, University of Naples; William Osler, M.D., LL.D., Professor of Medicine, Johns Hopkins University, Baltimore; William Playfair, M.D., LL.D., Professor of Obstetric Medicine, King's College, London; Thomas

George Roddick, M.D., Professor of Surgery, McGill University, Montreal, president of British Medical Association, 1897; Siegmund Rosenstein, M.D., Professor of Clinical Medicine, University of Leiden; Herman Snellen, M.D., Professor of Ophthalmology, University of Utrecht; and Sir Richard Thorne, K.C.B., F.R.S., Principal Medical Officer, Local Government Board, London. In introducing Professor Bowditch, the Dean of the Faculty of Law said: "The metropolitan University of Scotland rejoices to offer her degree to one who is justly regarded as a pioneer and leader of scientific enterprise in the United States of America. The researches which the distinguished tenant of the chair of physiology in Harvard University has himself prosecuted have added not a little to the advancement of that science, notably those into the laws regulating the growth of children, the force of ciliary motion and the innervation of the vascular system. But, more than this, he has stimulated others to carry on research, and has so efficiently trained his countrymen in the most approved methods, that we are justified in largely attributing to his influence the present position of the American school of physiologists. I now beg you to confer upon the distinguished American the Honorary Degree of Doctor of Laws."

GENERAL.

THE American Association for the Advancement of Science has begun the celebration of its fiftieth anniversary as we go to press. The meeting promises to be notable and to give an impulse to the work of the Association that will last for many years. Beginning with the address of the president in this number *SCIENCE* will publish full reports of the meeting.

THE French Association for the Advancement of Science has just held its annual meeting at Nantes. The President, M. Grimeaux, the eminent chemist, made an address entitled '*La chimie des infiniment petits*,' reviewing the work of Pasteur and his pupils. Reports were presented by the Secretary and Treasurer. The latter showed that the funds of the Association amounted to over 1,200,000 fr., and the income for the year to over 100,000 fr. More

than 40,000 fr. were granted for scientific purposes.

OVER four hundred papers have already been promised for the several sections of the Association of German Men of Science and Physicians which meets at Düsseldorf from September 19th to 24th.

THE German Pathological Society will hold its first meeting at Düsseldorf in connection with the meeting of German Men of Science and Physicians. Professor Virchow is president of the Society.

THE funeral of the late Dr. James Hall took place in Albany on August 15th. The pall-bearers were Professor Lewis Boss, of Albany; Professor B. K. Emerson, of Amherst, Mass.; Professor J. C. Smock, of Trenton, N. J.; Professor William H. Niles, of Boston; Dr. F. J. H. Merrill and Professor J. M. Clarke, of Albany; Mr. G. K. Gilbert, of Washington, and Professor A. S. Bickmore, of New York. A memorial address was given in the cathedral by Father Walworth, who had been Dr. Hall's friend for fifty years.

PROFESSOR JOHN COMFORT FILLMORE, of Pomona College, California, died suddenly on August 14th, at Taftville, Conn., while on his way to attend the meeting of the American Association in Boston, where he was to have read a paper on 'The Harmonic Structure of Indian Music.' For the past ten years Professor Fillmore has been engaged in the study of primitive folk-song. Gifted with great clearness of perception, a courage that knew no fear of untrodden ground, and possessed of a thorough musical education, he was well equipped for the new problems which he met and mastered in his field of research. To him belongs the honor of inaugurating 'the ethnological method of scientific treatment of our music system,' to quote the words of a learned German authority, speaking of Professor Fillmore's work. His demonstration that the chord line, as that of the least resistance, was the line along which folk-song was built, thus showing that harmony is fundamental to all music, ranks among the valuable contributions of science during recent years. A. C. F.

WE regret also to record the deaths of the

following men of science abroad: Dr. Axel Blytt, professor of botany at Christiania, at the age of fifty-four years; Dr. Carlo Giacomini, professor of anatomy in the University of Turin, on July 5th, and Dr. Ernest Candèz, the coleopterologist at Glain, near Lüttich, on June 30th.

THE will of the late Dr. William Pepper was admitted to probate on August 8th. A bequest of \$75,000 as an endowment for the William Pepper Laboratory of the University of Pennsylvania was revoked by a codicil dated about two weeks before his death. The codicil is as follows: "By my said will I made a bequest of \$75,000 as an endowment for the William Pepper Clinical Laboratory of the University of Pennsylvania. I have since the date of my will determined to make a gift during my lifetime of \$75,000 to the department of archaeology and paleontology of the University of Pennsylvania for the purposes of the University Museum. Hoping at some future time to be in a position to carry out my original intention, notwithstanding my gift to the Museum, but finding it inconvenient at this time to make both provisions I hereby revoke the provision of the first paragraph of the third item of my said will." The executors state that Dr. Pepper did not have time to make this gift to the University Museum before his death, but that the desire of the family is to carry out his known wishes.

THE will of the late Adolph Sutro, of San Francisco, who during his life-time made liberal gifts to the University of California, sets aside 1,000 acres of valuable land in San Francisco for charitable and educational purposes.

MADAME PÉAN, in accordance with the wishes of her husband, has presented to the Hôpital Saint-Louis, Paris, his valuable collection of anatomical and pathological casts.

THE monument to Professor Wilhelm Meyer, the discoverer of post-nasal vegetations, will be unveiled in Copenhagen during October. An address will be made by Sir Felix Simon.

PROFESSOR W. M. DAVIS, of Harvard University, has sailed for Europe, where he will spend next year. Correspondence may be addressed care of Baring Brothers & Co., London.

DR. C. H. HITCHCOCK, of Dartmouth, has left for the Hawaiian Islands, where he expects to spend a year in geological exploration. His address will be at Honolulu.

WE noted last week that some anxiety was felt concerning the safety of the *Belgica*. Colonel de Gerlach, father of the commander of the expedition, has since made a statement to the effect that the steamship was provisioned for three years, and, though it may have got blocked in the ice, there is no cause for apprehension regarding its safety. The *Belgica* was expected to arrive at Melbourne last month, after having carried out explorations of Graham Land and Weddell Sea.

AT a meeting of the Council of the Royal College of Surgeons of England on August 2, 1898, it was resolved: That in view of the proposed alterations in the laws relating to vaccination now contemplated in the bill before Parliament, the Council do reaffirm the following resolution adopted by them and forwarded to the Royal Commission on Vaccination on May 11, 1893, viz: "We, the Council of the Royal College of Surgeons of England, desire to put on record at the present time our opinion of the value of vaccination as a protection against smallpox. We consider the evidence in favor of its life-saving power to be overwhelming, and we believe, from evidence equally strong, that the dangers incidental to the operation, when properly performed, are infinitesimal. Experience has satisfied us that, even when vaccination fails to afford complete exemption from smallpox, it so modifies the severity of the disease as not only to greatly reduce its mortality, but to lessen the frequency of blindness, disfigurement and other grave injuries. We should, therefore, regard as a national calamity any alteration in the law which now makes vaccination compulsory. We are, moreover, firmly convinced that revaccination is an additional safeguard and should be universally practiced. We would add that we believe that the instructions of the Local Government Board for public vaccinators are well designed to secure the greatest efficiency in vaccination and to avoid the liability to risks from the operation."

MESSRS. G. W. AND W. D. HEWITT have, as we learn from the *Philadelphia Ledger*, prepared preliminary plans for the buildings it is proposed to erect for the Philadelphia Museums. These plans are elaborate, and the structures contemplated will be enormous in size. The central building will be 208 feet square and 226 feet in height, having a central dome 100 feet in diameter. This will be known as the Administration Building. On two sides of it there will be wings, each 90 feet in width and 384 feet in length, and these will be connected by two other wings, each 80 by 300 feet, forming a hollow square. These squares will be roofed over to form immense halls or courts, 296 by 216 feet in dimensions, which it is proposed to use in connection with the other sections of the buildings for general exhibition purposes. The Administration Building, which will contain all the offices, committee rooms, library and a large assembly room capable of seating 1,500, will be six stories high, while the buildings for exhibition will be only three stories high. All the windows will be fitted with stationary sashes, and air, which has first been cleared of all dust and impurities, will be introduced by means of fans. The power house, boiler rooms, etc., will be placed along the outer line of the plot, the grade at that point being such that the boiler house roof will be on a level with the grounds of the surrounding buildings. The plans call for granite, with light gray and brick and terracotta trimmings for the walls of the buildings, and the roofs are to be covered with slate or tile. The interior will be of fire-proof construction, plain, but substantial, especial care being given to exhibition cases and light. The proposition is to have the buildings completed in time for the exhibition, which is to take place next May.

At the recent meeting of the National Trust for Places of Historic Interest or Natural Beauty the annual report stated, according to the *London Times*, that during the past year there had been a steady growth of membership. As the aims and objects of the Trust became better known, it was more and more referred to for help and advice in the protection and preservation of places of historic interest or natural

beauty. The acquisitions of the past year had been two, each representing a different class of property. The members of the Trust had long been anxious that it should secure one of the headlands of Kent or Surrey overlooking the Weald and commanding a view of the hills, as these promontories were being rapidly purchased for building, and enclosed. During the past year that wish had been in a measure fulfilled, Mr. and Mrs. Richardson Evans and their relatives having presented to the Trust, in memory of Mr. Frederick Feeney, some land on the spur of Toy's Hill, which afforded an uninterrupted view to the South Downs. This was the first realization of the idea suggested by the Trust that memorials should sometimes take the form of beautiful scenery or of land commanding beautiful views dedicated to the memory of the dead. The adjoining piece of land on the spur had been presented to the Trust by Miss Octavia Hill. The trust had also acquired Joiner's Hall, Salisbury, an interesting old building, the impending destruction of which had too often led only to protests and vague regrets. The work of repairing the old clergy house at Alfriston was now nearly complete. A memorial stone had been erected at Barras Head recording its purchase by the Trust and its dedication to the public. With regard to Barmouth Cliff the Council regretted that the negotiations with regard to the addition of certain land to that already possessed by the Trust had fallen through. The sale of the Marquis of Worcester's Monmouthshire estate might possibly provide the Society with the opportunity of acquiring Tinturn Abbey, a piece of property of national interest. The Society hoped, as soon as the necessary arrangements could be made for their transfer, to become the trustees of the site of Driffild Castle and an old Columbarium at Garway, near Ross. The report also referred to the action taken by the Society to prevent injury and destruction, especially in regard to the St. John's Improvement and Victoria-embankment Extension Bill, the ancient camp at Uphall, near Ilford, in Essex, the Glava stones on the banks of the Nairn, Church-row, Hampstead, the old inn at Maiden Newton, the old vicarage at Luton, Christ's Hospital, the monk's barn Peterborough and several

railway projects. The statement of accounts showed a balance in hand of £191 on an income of £1,177.

THE *Elektrische Zeitung* publishes in its issues for July a long article by Dr. Zickler on telegraphy by means of ultra-violet light. According to the abstract in the *Electrical World*, it appears that he proposes a new system of wireless telegraphy, the chief object of which is to overcome the objection to the electromagnetic wave system which lies in the fact that these waves are distributed in all directions, and cannot be concentrated in one direction, all methods for doing this having apparently failed. The principle of his method, which it seems he has tried with success, is based on an observation first made by Hertz—namely, that light rays of short-wave length, especially the ultra-violet rays, have the property of promoting electric discharges—and his receiver is based on this fact. The transmitter consists of an arc light, the rays of which are condensed with lenses or reflectors into the direction in which they are to be sent, and at the receiving end the ultra-violet rays promote the discharge in a spark gap, which discharge will give rise to electric waves, which operate a coherer and through this a bell, a telephone or an ink writer; the apparatus is shown by means of diagrams. The condensing lens on the transmitter must be made of quartz, and not of glass, as the former will transmit the ultra-violet rays and the glass will not; these ultra-violet rays are shut off intermittently as desired, by means of a glass plate, which is moved rapidly in front of the camera like a shutter on an ordinary photographic camera; the ultra-violet rays will, in this way, be cut off, while there will be no apparent effect on the light rays, and for this reason the secrecy of the message will be preserved; the ordinary searchlights could be arranged to be used for the transmitter. The receiver consists of a glass tube, one end of which is made of a plate of quartz, so as to allow the ultra-violet rays to enter; these fall on a small, slanting plate in the tube, and forming one of the electrodes of the spark gap; 10 mm. from this is the other electrode, in the form of a small ball; both electrodes are mounted with platinum; the air in the tube is exhausted to a

certain degree, or is filled with a rarefied gas; the electrodes are connected with the secondary of a small induction coil, the knob being the anode and the disc the cathode; the induction coil need only give a spark of 1 to 2 cm. and should be provided with an adjustable resistance for regulating the voltage, so that it will be just insufficient to produce a spark when no rays fall on the gap; whenever the rays are received a discharge will take place; a coherer in the immediate neighborhood may be used to produce a call or any other signals. If the signals are merely to be made audible a telephone in the discharge circuit is sufficient. He begins the description of the results of a very large number of experiments which he has made, mostly with crude apparatus. He found that platinum was by far the best material for the electrodes, the charge between which is to be effected by the light; the question of the best shape of the electrodes was not so easily answered, and no definite results were obtained; the air surrounding the spark gap of the receiver was exhausted to 200 mm., which gave better results; the first tests were made at very short distances, and were then increased to 50 meters, at which very satisfactory results were obtained. Some deductions are then made from this data for greater distances, and he shows how much the light must be increased with the distance; with a 25-ampere lamp provided with a suitable reflector he thinks it will be possible to telegraph in this way to a distance of a number of kilometers; experiments with greater distances are to be carried out.

UNIVERSITY AND EDUCATIONAL NEWS.

THE London University Commission Bill has been finally passed both by the House of Commons and by the House of Lords, and London will have a teaching university as soon as royal assent has been added.

ANOTHER extremely important educational advance in Great Britain is announced in the introduction of a bill into Parliament by the government reconstructing the entire system of secondary education. There will be a comprehensive educational department presided over by a Minister of Education.